



# ***Private Sewage Disposal System***

SAN LUIS OBISPO COUNTY DEPARTMENT OF PLANNING AND BUILDING DEPARTMENT

County Government Center San Luis Obispo, California 93401 Telephone 805 781-5600

On-site sewage disposal systems utilize a buried tank for the processing of solids and leach areas for disposal of liquid waste through soil infiltration. The systems shall be designed and constructed in accordance with the following standards.

**Minimum Percolation Required.** Leaching systems may be used where the percolation rate is between 0 and 120 minutes per inch. Such systems may not be used where percolation rates are slower than 120 minutes/inch without approval of the building official. Systems with percolation rates slower than 60 minutes per inch must be designed by a licensed engineer. Systems with percolation rates less than 60 minutes per inch may be designed prescriptively using the table in "Sizing of Disposal Areas."

**Site Slope.** Septic tanks or leaching systems installed on slopes of 20 percent or more shall be designed and the installation certified by a registered engineer. Design shall minimize grading needed for installation and maintenance. No disposal area shall be located where the natural slope is 30 percent or greater.

**Separation from Impermeable Strata.** A minimum distance of 10 feet shall be maintained from the bottom of leaching systems to impermeable strata. This distance shall be verified by test borings where required by the Building Official.

**Groundwater Separation.** The required depth from the bottom of the leach area to usable groundwater (including usable perched groundwater) is given in the table below. The Building Official may require testing or documentation to verify that the required separation has been met.

<b>Percolation Rate</b> (minutes per inch)	<b>Minimum Distance to Groundwater</b> (feet)
less than 1	50*
1 - 4	20*
5 - 29	8
30 and above	5

\* If there is a horizontal separation of at least 250 feet between the disposal area and any water well or surface water, minimum groundwater separation shall be 20 feet for percolation rates of less than one minute/inch, and eight feet for percolation rates of one to four minutes/inch.

## **SYSTEM LOCATION**

Soil absorption disposal systems, including but not limited to leach areas, shall in general be located in accordance with the setbacks in the following table.

<b>Min. Distance Required From:</b>	<b>Building Sewer</b>	<b>Septic Tank</b>	<b>Disposal Field</b>
Buildings or Structures	2 feet	5 feet	8 feet
Property Line- Private Property	Clear	5 feet	5 feet
Water Supply Wells - Private - Public	50 feet 50 feet	50 feet 50 feet	100 feet 200 feet
Streams, Springs & Water Migration	50 feet	50 feet	100 feet
Large Trees	–	10 feet	–
Reservoir, Spillway Elevation	–	200 feet	200 feet
Disposal Field	–	5 feet	4 feet*
Domestic Water Line	1 foot	5 feet	5 feet
Domestic Wells in Unconfined Aquifer	–	50 feet	100 feet
Distribution Box	–	–	5 feet

\* Plus two feet for each additional foot of trench depth in excess of one foot below bottom of leach pipe.

## **REQUIRED SEPTIC TANK SIZE**

The following table gives the minimum tank capacity for new or replaced residential systems in the county. For septic tank capacity for other occupancies, and for septic tank design, refer to the Uniform Plumbing Code (UPC) Appendix I.

<b>CAPACITY OF SEPTIC TANKS</b>			
<b>Single Family Dwellings - Number of Bedrooms</b>	<b>Multiple Dwelling Units/Apts - One Bedroom Each*</b>	<b>Other Uses: Max Fixture Units Served**</b>	<b>Minimum Septic Tank Capacity in Gallons</b>
1 or 2	–	15	750
3	–	20	1000
4	2 units	25	1200
5 or 6	3 units	33	1500

\* Extra bedroom 150 gallons

\*\*See UPC Table 7-3

## **SIZING OF DISPOSAL AREAS**

### **Disposal Area - Single Family Dwellings**

For systems serving single family dwellings, required disposal areas are given in the table below. Percolation tests are required for all sites except in areas where it is known that the percolation rate is the 1-20 min/inch range (such as for sand). These absorption areas in the table are based on the Regional Water Quality Control Board's Basin Plan requirement that residential systems be designed for a flow rate of at least 375 gallons per day. For percolation rates slower than 60 minutes/inch, a system must be designed by a licensed engineer.

<b>Required Size of Disposal Area for Residential Sewage Disposal Systems</b>					
<b>Percolation Rate</b> (min/inch)	<b>Application Rate</b> (gal/sq ft/day)	<b>Absorption Area<sup>1</sup></b> (sq ft)	<b>Trench Length<sup>1</sup> (ft)</b>		
			<b>Standard Trench 3' x 3'<sup>2</sup></b>	<b>Plastic Leach Chamber</b>	
				<b>Standard</b>	<b>High Cap.</b>
1 - 20	0.8	469	67	117 <sup>3</sup>	92
21 - 30	0.6	625	90	156 <sup>3</sup>	123 <sup>3</sup>
31 - 40	0.5	750	107 <sup>3</sup>	187 <sup>3</sup>	147 <sup>3</sup>
41 - 50	0.4	938	134 <sup>3</sup>	234 <sup>3</sup>	184 <sup>3</sup>
51 - 60	0.25	1500	214 <sup>3</sup>	375 <sup>3</sup>	294 <sup>3</sup>
>60	0.1	Design by Engineer	By Engineer	By Engineer	By Engineer

1. These sizes are good for up to four bedrooms. For additional bedrooms, see plans examiner.
2. 3' x 3' trench means trench 3' wide extending 3' below drain pipe. For other trench sizes see example below.
3. Requires two or more drain lines fed from distribution box, so that no line exceeds 100'.

### **Disposal Area - Other Occupancies**

The size of disposal areas for other occupancies shall be determined in accordance with UPC Appendix I, except that the application rates used to calculate disposal field area shall be those given in the table above, not those found in the UPC.

### **Required Expansion Area**

Individual systems shall be designed and constructed to either reserve sufficient site area for dual leach fields (100% replacement area), or to include dual leach fields with a diverter valve at the time of initial system installation. Installation of dual leach fields will be required if site access for installation of the expansion area would not be feasible after initial site development.

## **Calculating Area of Disposal Fields**

When disposal fields are installed, the required area of trench bottom shall be provided exclusive of any hard pan, rock, clay, or other impervious formations. Side wall area in excess of the required twelve (12) inches and not to exceed thirty-six (36) inches below the leach line may be added to the trench bottom area when computing absorption areas.

**Sample calculation:** The following example shows how to compute the minimum length of a disposal field.

### **Assumptions:**

- a. Three-bedroom house;
- b. Percolation rate = 36 minutes/inch;
- c. Leach line = 3 feet wide, 2 feet below leach pipe.

### **Calculation:**

- (1) From the table on page 3 the minimum total required leach area would be 750 square feet.
- (2) Calculate the unit trench area at three feet (trench bottom) + two feet (two trench sidewalls each having one foot in excess of the required 12" of depth) = five square feet per linear foot.
- (3) Calculate the minimum total length at 750 square feet divided by five square feet per linear foot = 150 feet.

### **Trench Design:**

Since the total length required is more than 100 feet, two or more parallel lines totaling 150 linear feet, supplied from a distribution box, would be required.

## **Plastic Leaching Chambers**

Plastic leaching chambers shall have their area computed at 4 square feet per linear feet for "standard" units and 5 square feet per linear foot for "high capacity" units.

## **DISPOSAL FIELD CONSTRUCTION**

	<b>Minimum</b>	<b>Maximum</b>	<b>Comments</b>
Number of drain lines per field	1	—	Two or more one lines must be fed from a distribution box
Length of each line	—	100 feet	Perforated pipe must be capped
Width of trench	18 inches	36 inches	See UPC for leaching beds
Spacing of lines	6 feet center to center 4 feet edge to edge	—	Use most restrictive. Increase edge spacing 2' for every added 1' of trench depth in excess of 1'
Filter material (rock)	3/4 inch	2 ½ inch	Must be clean rock
Filter matl over lines	2 inches	—	Cover with material such as filter fabric to limit earth intrusion
Earth cover over lines	12 inches	—	18 inches preferred
Grade of drain lines	level	3 in/100 ft	

## **REPLACEMENT OF FAILED SYSTEMS**

Where leaching systems are being replaced or repaired because of system failure, the standard procedure will be to require a percolation test and a system design based on the table in "Sizing of Disposal Areas." Percolation tests may be waived in individual case based on considerations such as long lifetime for the existing (failed) system, proposal of a conservative (i.e. large) size for the replacement system, or other pertinent information. Systems that have not failed may be enlarged without a percolation test.

Where an existing private sewage disposal system has failed and a replacement system cannot be installed to meet the criteria of this section because of lot size constraints, the building official may approve a replacement system that meets all of the following conditions and is designed to satisfy as many of the other applicable standards as possible:

- The system is designed by a registered engineer.
- The proposed system is approved by the County Health Department.
- The installation of the approved system is inspected and certified by the design engineer.

## **ABANDONMENT OF SEPTIC TANK**

The abandoned septic tank will need to be pumped. The receipt or a copy of the receipt of the pumping will need to be given to the area inspector. The tank will then need to be filled with any of the following:

- Sand
- Cement slurry
- Concrete

Please note if tank is to be completely removed the excavated area will need to be backfilled with an approved material and compacted to 90%.

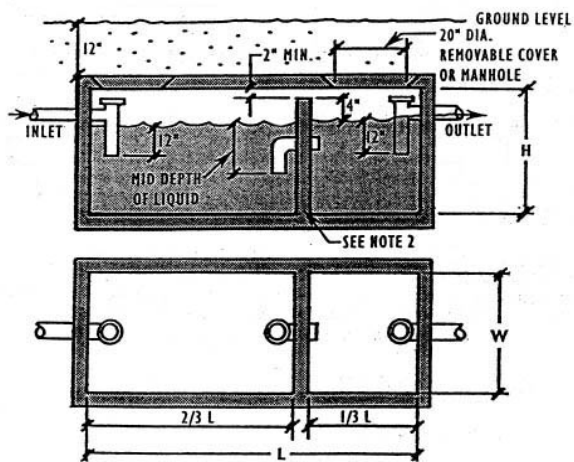
## **ADDITIONS TO EXISTING DWELLINGS**

Where an addition of one or more bedrooms are proposed for an existing dwelling, we will be asking for verification that the existing system, including both septic tank and disposal fields, meets current standards as detailed in this document. Verification is normally done by a licensed septic system installation contractor.

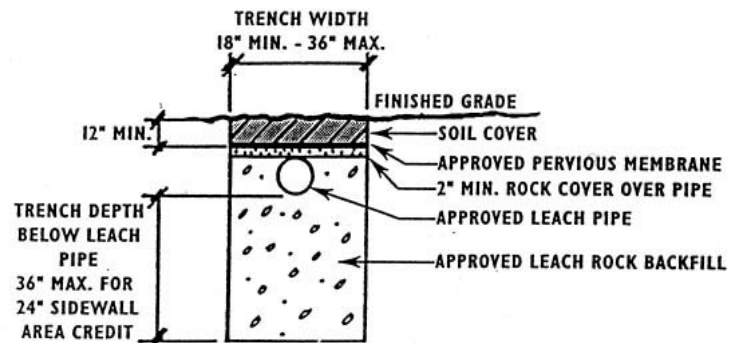
## **DESIGN CHANGES IN FIELD**

IF you want to change from a standard field to plastic leaching chambers or vice-versa, and the plans were drawn by a licensed architect or engineer, that licensed person must approve that change in writing. If the plans were not drawn by a licensed person, and if the percolation rate is less than 60 min/inch, you may change from one type of leaching system to another without formal approval as long as the required size of leach area is met. Refer to preceding table.

## CROSS SECTION OF TANK AND LEACH LINE



Typical Septic Tank Section



Typical Leach Trench Section